

TECHNICAL REPORT

OLD BURYING GROUND

**ARCHAEOLOGICAL TOWN-WIDE RECONNAISSANCE SURVEY
TOWN OF ARLINGTON, MASSACHUSETTS**

Dianna L. Doucette

Submitted to:

Arlington Department of Planning and Community Development

Arlington Town Hall
730 Massachusetts Avenue
Arlington, MA 02476

Submitted by:

The Public Archaeology Laboratory, Inc.

26 Main Street
Pawtucket, Rhode Island 02860



PAL PUBLICATIONS

AUTOCAD SPECIALIST/CARTOGRAPHER
DANA M. RICHARDI

GIS SPECIALIST
JANE MILLER

EDITOR
CATHY COFFIN

PRODUCTION MANAGER
GAIL M. VAN DYKE

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Introduction

The Public Archaeology Laboratory, Inc. (PAL) has completed its investigations of the Old Burying Ground as part of the Town-Wide Archaeological Reconnaissance Survey for Arlington. This report presents the tasks involved; the results, including a summary of the background research; and management recommendations, including explanations of the technology involved with the recommended additional testing.

As part of the Old Burial Ground survey, PAL did the following:

1. Performed archaeological field reconnaissance to identify and document specific locations in the cemetery that are likely to have significant archaeological features and deposits.
2. For locations that could be adversely affected by future ground-disturbing projects, provided recommendations for a future, separately funded investigation using ground-penetrating radar (GPR) and/or archaeological testing for belowground features (e.g., gravestones, vaults, and grave shafts), systematic soil probing for buried grave markers, and methods for documenting existing conditions within the cemetery.
3. Provided recommendations consistent with the historic cemetery preservation plans for the Old Burying Ground to meet the goals of historic preservation planning, maintenance and management, and public interpretation.

Cemetery Description

The Old Burying Ground (ARL.800), also referred to as the “Arlington Old Cemetery” and the “First Parish Church Old Burying Ground,” was established in 1732 on Pleasant Street in Arlington Center and is the oldest cemetery in the town (Arlington Master Plan 2015:115). The cemetery is included as a contributing property in the Arlington Center National Register District (ARL.F), which is listed in the National Register of Historic Places (National Register), and is protected with a preservation restriction. The cemetery is bounded to the east and southeast by Pleasant Street, to the south by the New England Telephone Exchange Building (ARL.1062), to the west by Library Way and the Whittemore-Robbins House (ARL.601) and Robbins Library (ARL.603), and to the north by a walkway and the First Parish Unitarian Universalist Church (ARL.28) (Figure 1).

The cemetery is on an approximately 1.5-acre well-maintained parcel and consists of slate and marble gravestones, tombs, granite obelisks, and monuments surrounded on the north, east, and west by stone and brick walls and on the south by a chain-link fence. Ground conditions consist of mowed lawn and high-story mature trees of mostly pine, oak, and maple (Photographs 1 and 2). Tree roots are visible extruding through the ground surface in several areas, and some of these roots appear to be impacting the gravesites (Photographs 3 and 4). The parcel is at an elevation of approximately 50 feet above sea level, and soils within the cemetery consist of Merrimac-Urban land complex fine sandy loam with 0 to 8 percent slopes (USDA–NRCS 2022).

One of the most prominent features of the Old Burying Ground is a 19-foot-high granite obelisk honoring those killed at the Battle of Menotomy on the first day of the Revolutionary War, April 19, 1775 (Photograph 5). Jason Russell and 11 other patriots were buried in a mass grave without coffins (AHS 2000).

A plaque at the cemetery entrance (Photograph 6) reads as follows:

The Old Burying Ground (1732).
Here are buried Jason Russell,
Jason Winship and Jabez Wyman
of Menotomy and Nine Minute-Men from other towns
who lost their lives
April 19, 1775.

Find a Grave, an online resource, has 605 records for the Old Burying Ground that date from 1706 to 2000. Although the National Register form for the Old Burying Ground lists the earliest interment as 1735, *Find a Grave* lists one grave—that of Mary Patten Russell—dating to 1706 (Old Burying Ground in Arlington, Massachusetts - Find a Grave Cemetery).

History of the Old Burying Ground

The following historical information about the Old Burying Ground is excerpted and adapted from Charles S. Parker's (1907) *Town of Arlington Past and Present* and from an article about the cemetery available on the Arlington Historical Society's (AHS's) website (AHS 2000), which indicates that the information comes from Ralph D. Sexton "former Arlington Historical Commissioner and leader of two Boy Scout projects to re-transcribe cemetery epitaphs."

No archaeological investigations have been conducted within the Old Burying Ground and no subsurface testing has been done. No aboveground structures are within the cemetery today, but the AHS (2000) article refers to at least two past structures: an 1806 building for the First Parish Church's hearse and a schoolhouse facing Pleasant Street from 1810 to 1843. The garage was to the south of the dry brook bed in the center of the cemetery called "the gutter" due to the amount of water runoff from the hills in the spring that would run directly under the building (Photograph 7).

According to Parker (1907:252–253), the schoolhouse was moved from the First Parish Church lot and placed "on a line with the stone wall enclosing the ground, parallel with the south bank of the brook. This stream was planked over to make the walk to the smaller building to the rear, built directly over the brook." The schoolhouse may have been used for religious services while the First Parish Church was built in the location of the original schoolhouse.

Parker (1907:254) also writes that in 1693 a

building about 30-x-40, 12 feet post, with a garret under the roof, was built well to the rear of the present First Parish Church Lot. This is in a measure supposition; but Mr. J. B. Russell says the building replacing it was built on the old foundation and on the same plan as its predecessor. In locating the site of this building, Mr. Russell says, 'the rear end of the schoolhouse abutted on the brick wall of the long range of tombs erected in 1810-11, and the schoolhouse was removed to allow the extension of these tombs' (Photograph 8).

The building for the hearse was to the right of the schoolhouse and was eventually moved to Mount Pleasant Cemetery, which was established in 1843 when the Old Burying Ground ran out of burial space (Parker 1907:254). The fate of the schoolhouse is unknown, but it was likely moved to allow more space in the Old Burying Ground.

According to the AHS website article, the remains of the 12 men killed at Menotomy were disinterred and reburied in a stone vault under the obelisk in 1848. In addition, “many of the British dead from that day” were buried in an unmarked mass grave along the wall near the brook “in the spot used for the burial of slaves,” referring to the northern edge of the Old Burying Ground (Photograph 9).

The brook that ran through the cemetery is now below a crushed stone path connecting Library Way to Pleasant Street (between the church and the cemetery), and the wall is along the south side of the path. The information about the British and slave burials, according to the AHS, is from the Rev. Samuel Abbot Smith’s 1864 self-published lecture (republished by the Arlington Historical Society in 1974), which is recounted by Parker (1907:189) and apparently is the only evidence that slaves are buried in the Old Burying Ground.

The cemetery appears on a 1900 (Stadly) map as “Burying Ground,” and the triangular cemetery parcel is shown on an 1800 Menotomy map that also shows the brook running through the northern portion (Figures 3 and 4). A building is shown on the 1800 map within the triangle as belonging to Reverend Samuel Cooke. Cooke bought 1 acre from Jason Russell for a house, which was built in 1740 and moved to Warren Street in the late 1870s. It was used there as a tenement house until it was destroyed by fire in 1881 (Parker 1907:42–44). The location of the present-day New England Telephone Exchange Building (ARL.1062; see Photograph 8) possibly could be where the Reverend Cooke house once stood. A hand-drawn map of the Old Burying Ground produced in 1957 for the Menotomy Chapter of the Daughters of the American Revolution (Figure 5) shows the cemetery divided into three sections (Sections A, B, and C).

Management Recommendations

Based on historical and archaeological information presented above, several unmarked graves and building foundations could be present within the Old Burying Ground. Several areas of the cemetery exhibit root disturbance, failing stone walls, and/or broken gravestones. PAL recommends additional testing before the Town of Arlington initiates any revitalization projects within the cemetery to identify any unmarked buried remains and/or historical features. This testing should include an updated intensive geophysical survey (i.e., ground-penetrating radar [GPR]) and limited subsurface probing or an intensive archaeological survey (involving excavations) in the areas of proposed ground disturbance. Depending on the results of the GPR and intensive survey testing, additional background research may be warranted.

Testing Explanations

The following sections explain the technology involved with the recommended additional testing in the Old Burying Ground.

Ground Penetrating Radar (GPR)

GPR is an active, noninvasive geophysical testing method that records contrasts in the dielectric (i.e., nonconducting) properties of subsurface materials (Clark 2001; Conyers 2004, 2006). A pulse of transmitted electromagnetic energy emitted from an antenna is reflected or absorbed by such contrasts, and the resulting reflections are recorded to produce a vertical profile of the pulse reflections. Most of these reflections are generated at interfaces between materials of differing relative dielectric permittivity (i.e., at the boundary of different stratigraphic layers where changes in the velocity of the originating signal occur). A two-dimensional GPR profile is a representation of vertical and horizontal stratigraphy consisting of individual traces that result from a single pulse of energy and the resulting reflections at a specific location that are digitally merged to produce an image of dielectric contrasts. In this sense, GPR is not providing a stratigraphic profile, but is generating a representation of local dielectric contrasts that provide a proxy for subsurface stratigraphic changes.

When used for archaeological testing, GPR can identify buried historic shaft features such as wells, privies, building foundations, and trenches due to dielectric contrasts that often exist between feature fills (soils) and their surrounding sediments; the visible truncation of internal stratigraphic layers; and/or the high reflection amplitudes of electromagnetic signals from bricks or stones. GPR surveys have been useful in identifying unmarked graves in New England. Like any shaft feature, a grave is a vertical cut through and disturbance of the natural soil column. Grave fill usually contains internally chaotic characteristics derived from disturbance of natural soil layers that contrast sharply with undisturbed subsoil (Bevan 1991) and is recognizable in a GPR profile. Furthermore, unlike a soil disturbance, well-preserved coffins and brick and concrete vaults provide ideal point-source objects to generate strong GPR data that are easily recognizable as graves.

The depth of radar penetration depends on numerous factors, including antenna frequency, sediment type, moisture content, soil compaction, and salt content. Higher frequency antennas are capable of resolving smaller targets and interfaces than those that can be identified with lower frequency antennas at the expense of depth penetration. Moisture content increases sediment density through filling of interstitial pore spaces, while compaction causes a similar effect through compressing spaces between particles. The presence of water, salts, and clay particles in the sediment increases conductivity and thus reduces the quality of GPR data (Conyers 2006:145). Clays, shale, and other high conductivity materials may attenuate or absorb GPR signals (Conyers 2004, 2006).

Intensive Archaeological Survey

Depending on the results of the GPR survey, an intensive archaeological survey may be beneficial to determine if there are any significant features within the cemetery that should be investigated and/or may be used to validate the results of the GPR survey. Subsurface investigation can include ground probing to detect buried gravestones, stone walls, or structures, or excavating small (50-x-50-centimeter [approximately 19.7-x-19.7-inch]) test pits to locate more subtle features such as grave shafts and/or post molds. A post mold is the stain or imprint of a disintegrated wooden post in which the hole is filled with decayed matter visible in the subsoil. Any identified post molds could represent fences or railings that were once within the cemetery or around any of the possible structures that were once present.

Best Management Practices

The Town should follow best management practices for any revitalization work within the Old Burying Ground, as described in *Massachusetts Laws Relating to Gravestone Preservation* (Appendix A) and as outlined in Lynette Strangstad's *A Graveyard Preservation Primer* (2nd ed., 2013 American Association of State and Local History) and the Massachusetts Department of Conservation & Recreation's *Preservation Guidelines for Municipally Owned Historic Burial Grounds and Cemeteries* (3rd. ed., 2009: <https://www.mass.gov/doc/preservation-guidelines-for-municipally-owned-historic-burial-grounds-and-cemeteries/download>).

Overall, photographic documentation and updated mapping using a submeter GPS unit should be conducted before moving gravestones, monuments, stone walls, or any other features within the cemetery.

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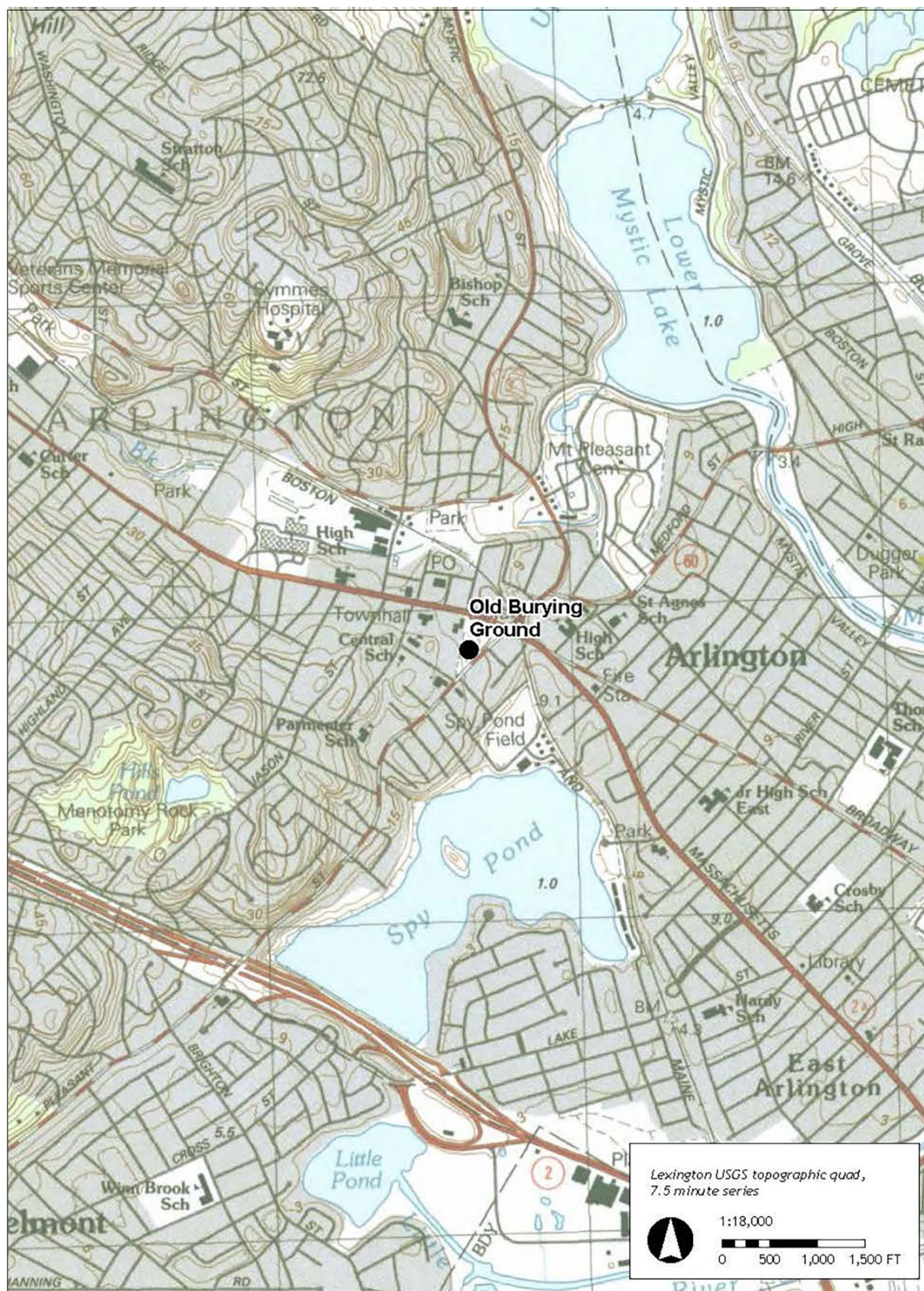


Figure 1. Location of the Old Burying Ground on the Lexington USGS topographic quadrangle, 7.5 minute series.

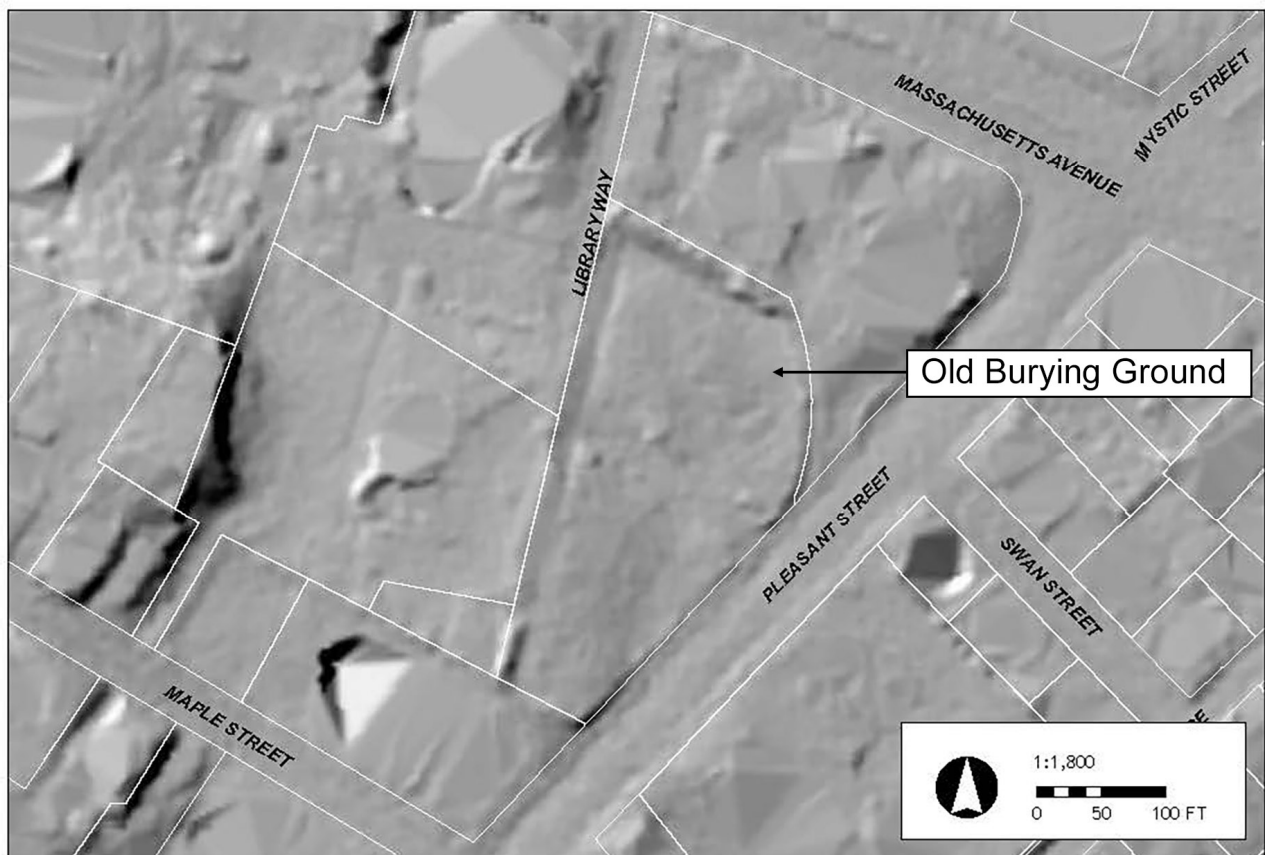
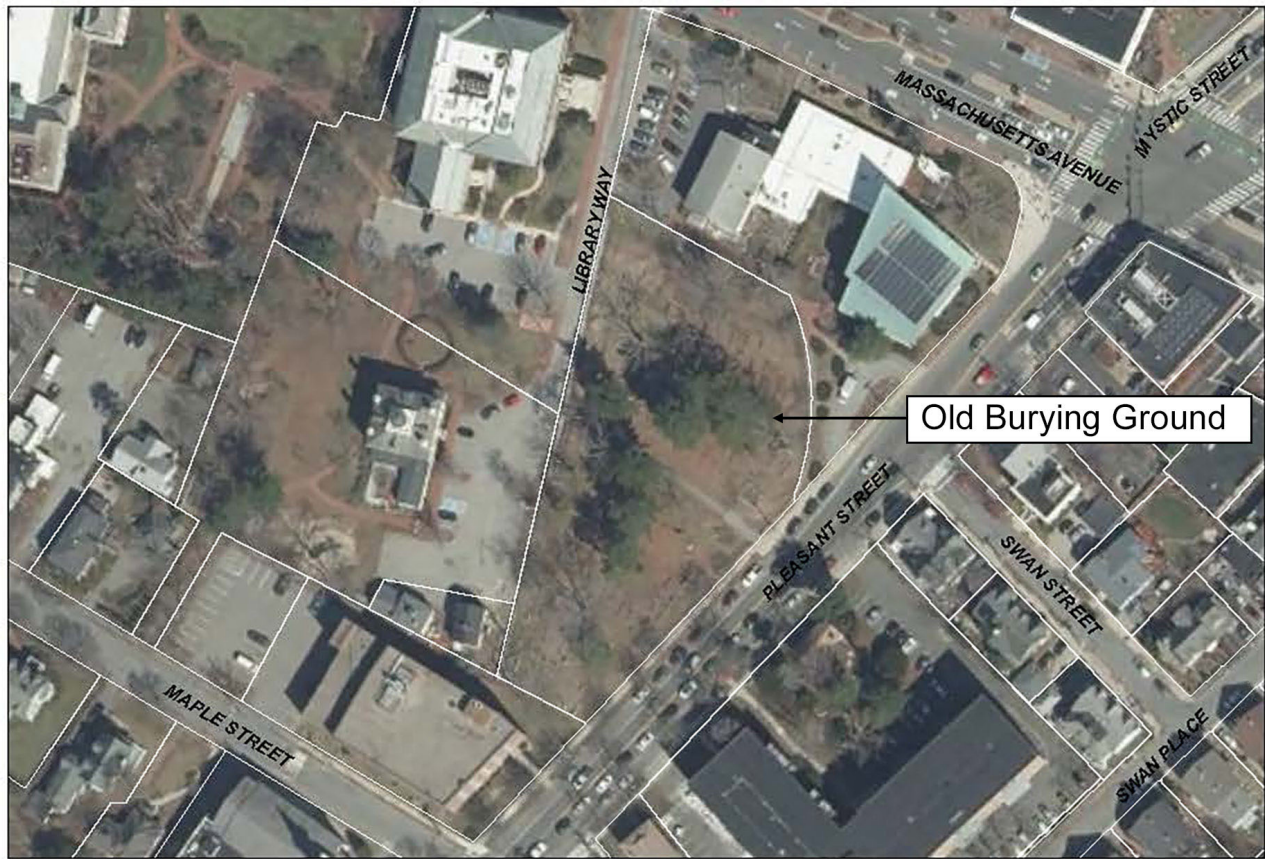


Figure 2. Location of the Old Burying Ground on 2021 aerial and 2021 Lidar shaded relief.

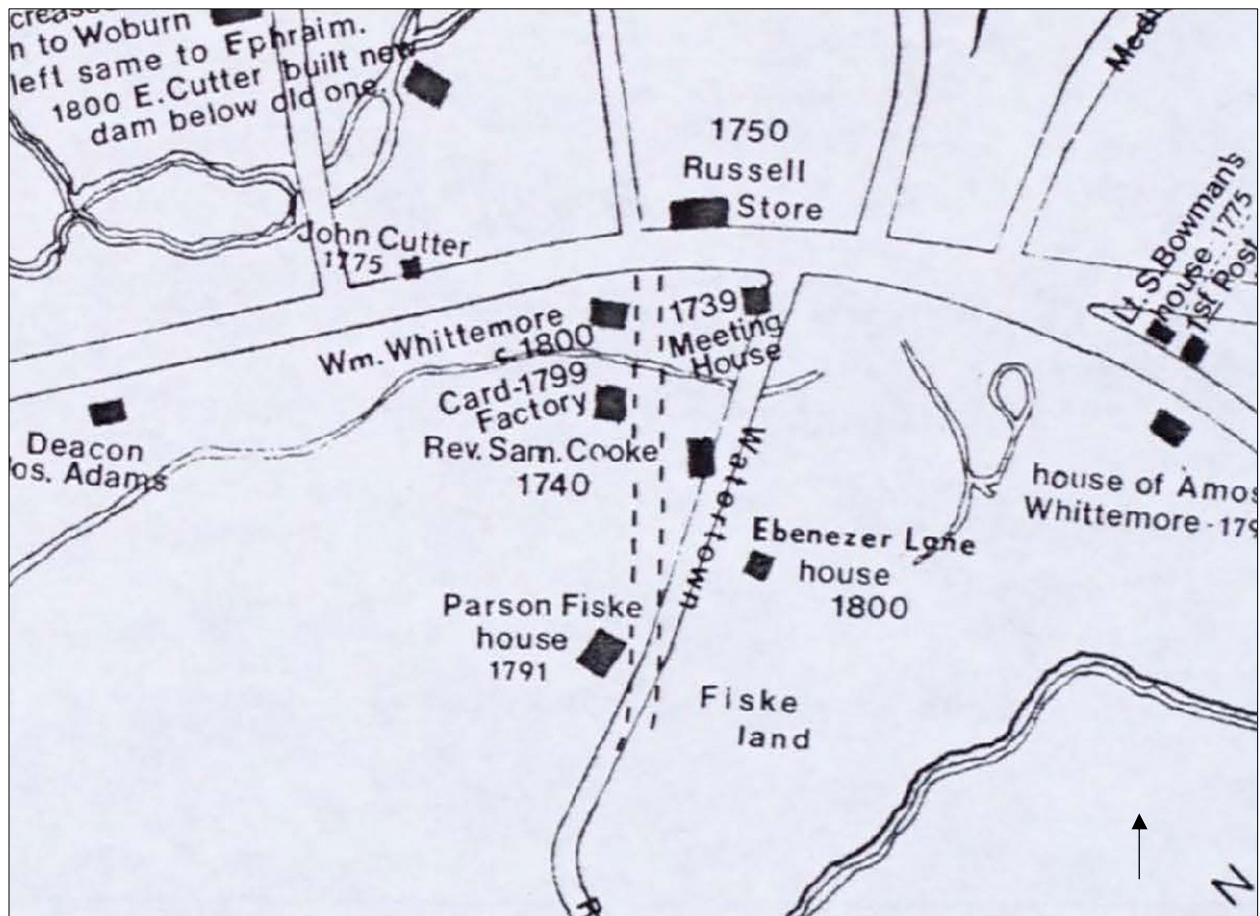


Figure 3. From the 1800 Menotomy Map (source: Menotomy map 1800 - Digital Commonwealth).

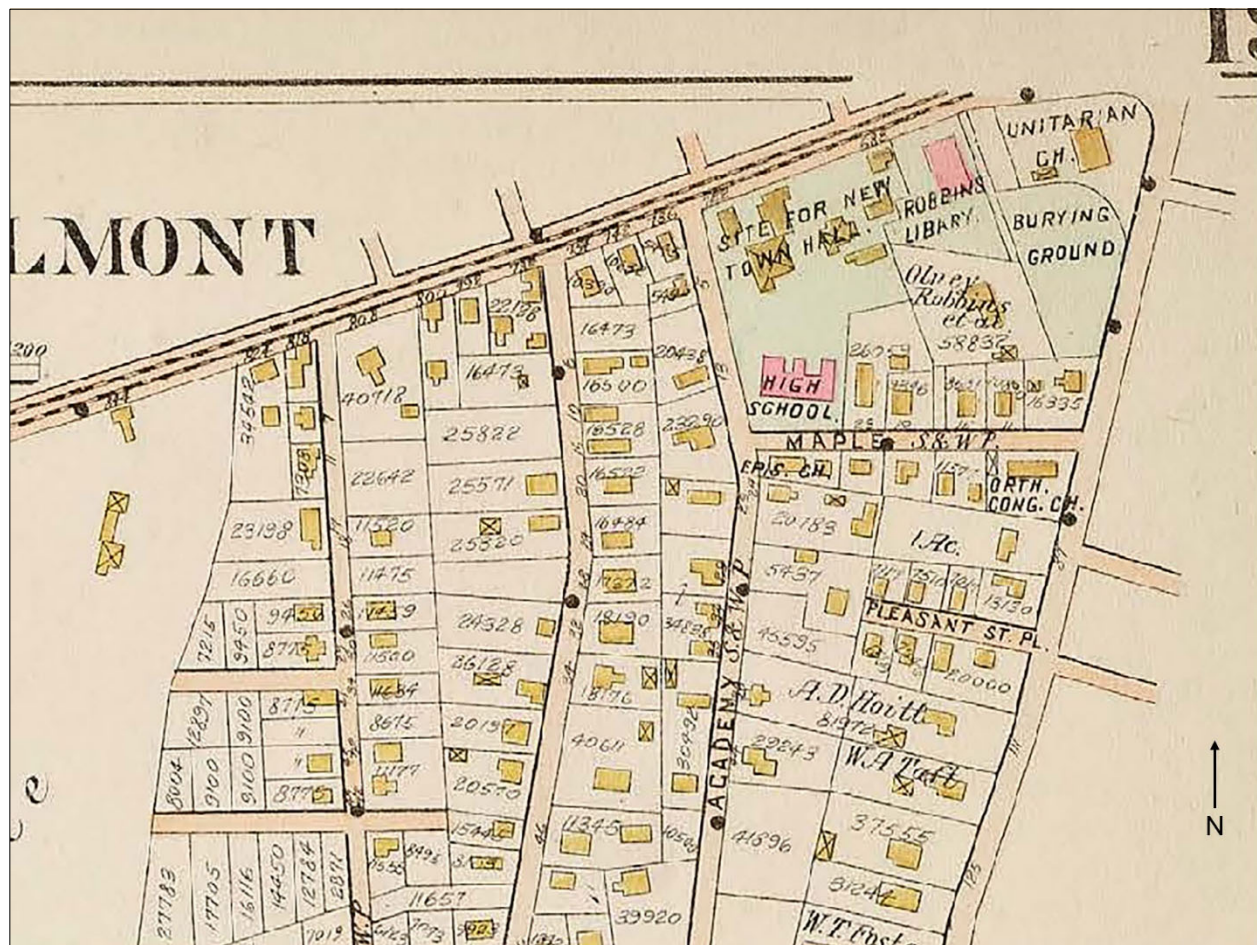


Figure 4. 1900 Stadly map showing the Old Burying Ground in the top right corner (source: Stadly 1900).

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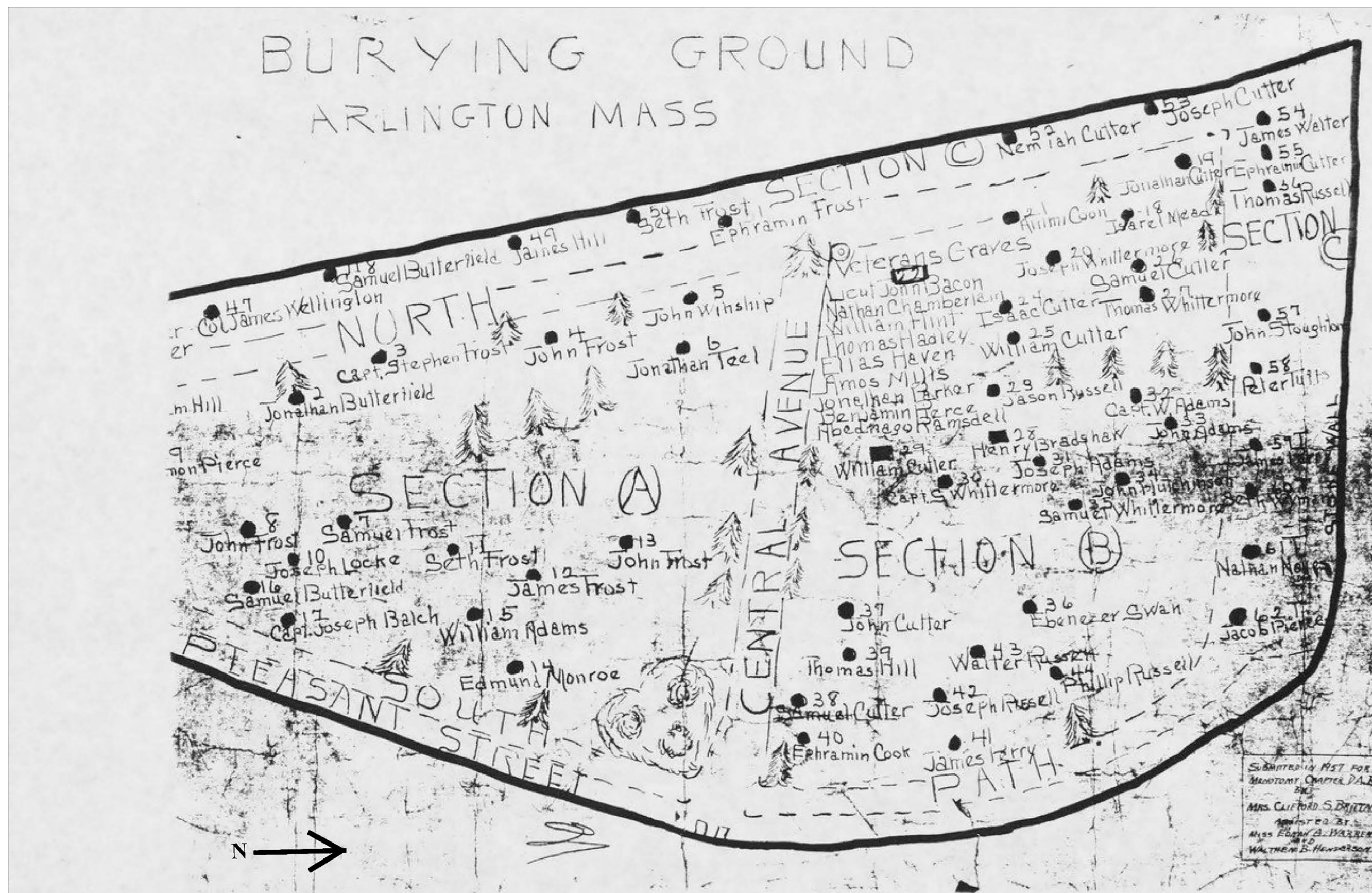


Figure 5. Map of the Old Burying Ground drawn in 1957 for the Menotomy Chapter of the Daughters of the American Revolution (DAR) (source: Old burying ground Arlington, Mass. - Digital Commonwealth).



Photograph 1. General conditions of the Old Burying Ground, view northwest.



Photograph 2. Old Burying Ground, view northeast.



Photograph 3. Example of competing tree roots, view southwest.



Photograph 4. Example of poor vegetation maintenance along back (west) wall of Old Burying Ground, view west.



Photograph 5. Granite obelisk in the Old Burying Ground, view northwest (source: Wikimedia Commons 2005).



Photograph 6. Plaque at Pleasant Street entrance to the Old Burying Ground, view northwest.



Photograph 7. Approximate location of “the gutter,” view northwest.



Photograph 8. Possible location of the schoolhouse near the brick wall of tombs erected in 1810–1811, view southeast. The New England Telephone Exchange Building is behind the wall on the left, and the yellow Whittemore-Robbins House is on the right.



Photograph 9. Approximate location of the brook and unmarked graves along the northern edge of the Old Burying Ground, view northwest.

APPENDIX A

MASSACHUSETTS LAWS RELATING TO GRAVESTONE PRESERVATION

APPENDIX A. MASSACHUSETTS LAWS RELATING TO GRAVESTONE PRESERVATION

General Laws, Chapter 114

Section 16. Any town may annually appropriate and raise by taxation such sums as may be necessary to care for and keep in good order and to protect by proper fences any or all burial grounds within the town in which ten or more bodies are interred and which are not properly cared for by the owners, and the care and protection of such burial grounds shall be in charge of the cemetery commissioners, if the town has such officers, otherwise in charge of the selectmen.

Section 17. A town shall not alienate or appropriate to any other use than that of a burial ground, any tract of land which has been for more than one hundred years used as a burial place; and no portion of such burial ground shall be taken for public use without special authority from the general court. "Burial place", as referred to in this section, shall include unmarked burial grounds known or suspected to contain the remains of one or more American Indian.

Section 18. Any town having within its limits an abandoned or neglected burying ground may take charge of the same and keep it in good order, and may appropriate money therefor, but no property rights shall be violated, and no body shall be disinterred. No fence, tomb, monument, or other structure shall be removed or destroyed, but the same may be repaired or restored.

Chapter 272

Section 71. Whoever, not being lawfully authorized by the proper authorities, willfully digs up, disinters, removes, or conveys away a human body, or the remains thereof, or knowingly aids in such disinterment, removal or conveying away, and whoever is accessory thereto either before or after the fact, shall be punished by imprisonment in the state prison for not more than three years or in jail for not more than two and one-half years or by a fine of not more than four thousand dollars.

Section 73. Whoever willfully destroys, mutilates, defaces, injures or removes a tomb, monument, gravestone, American flag, veteran's grave marker, metal plaque, veteran's commemorative flag holder, commemorative flag holder representing service in a police or fire department, veteran's flag holder that commemorates a particular war, conflict or period of service or flag, or other structure or thing which is placed or designed for a memorial of the dead, or a fence railing, curb or other thing which is intended for the protection or ornament of a structure or thing before mentioned or of an enclosure for the burial of the dead, or willfully removes, destroys, mutilates, cuts, breaks or injures a tree, shrub or plant placed or being within such enclosure, or wantonly or maliciously disturbs the contents of a tomb or a grave, shall be punished by imprisonment in the state prison for not more than five years or by imprisonment in the jail or house of correction for not more than two and one-half years and by a fine of not more than five thousand dollars. In addition, the court shall order any person convicted of an offense pursuant to this section to pay restitution to the owner of the property that was damaged, destroyed, mutilated, defaced, injured, or removed.

Section 73A. In any city or town which accepts this section, the provisions of section seventy-three shall not prohibit the removal, in accordance with rules and regulations promulgated by the state secretary, of a gravestone or other structure or thing which is placed or designed as a memorial for the dead, for the purpose of repair or reproduction thereof by community sponsored, educationally oriented, and professionally directed repair teams.

Section 75. Whoever, without authority, removes flowers, flags or memorial tokens from any grave, tomb, monument or burial lot in any cemetery or other place of burial shall be punished by a fine of not more than one thousand dollars or by imprisonment for not more than six months.

Rules and Regulations Issued by the Secretary of State

1. Permits to restore and reproduce gravestones under the provisions of Chapter 448 of the Acts of 1973 shall be issued by the Secretary of the Commonwealth after he shall have satisfied himself that the proposals for such restoration and/or reproduction meet the standards of educational value, community interest, and professional competence. In making this determination, the Secretary may call upon the assistance of the staff and members of the of the Massachusetts Historical Commission, local historical district commissions, and local, regional, statewide, and national historical and other learned societies and individuals whose experience he may deem relevant.
2. Reproduction of the gravestones may only be done for historical purposes by nonprofit organizations.
3. Request for a permit must be submitted upon application form and shall give a detailed plan of the gravestone restoration project.